

169

**METHOD AND APPARATUS FOR ECONOMICAL DRIFT  
COMPENSATION IN HIGH RESOLUTION MEASUREMENTS****ABSTRACT OF THE DISCLOSURE**

A system for measuring differences in a physical variable, such as temperature or  
5 voltage, by utilizing predictable behavior in the relative drift over time of reference curves  
representative of offset, and other measurement parameters for various circuit elements.  
In an initial calibration mode, the system records several reference curves, correlating  
ambient condition to offset, and, optionally, other parameter measurements acquired from  
circuit elements. These reference curves representing drift behavior, among electrical  
10 components, can be updated for time drift at a single, current arbitrary ambient  
temperature, the measurements for which can be obtained quickly and applied as a time  
drift correction to the reference curves, without interrupting normal system operation, to  
provide a compensated difference measurement between the different values of the  
physical variable. Additionally, the system dynamically tracks cumulative system errors,  
15 in order to calculate optimal system resolution, based upon current operating conditions.